Figure 1(a)-(d). Novel nucleotide sequences 3'prime of the cow Cgamma gene (Cow Cγ 3′ flanking sequences). Primers are shown in shaded boxes. The 5′ primer is in CH3, and the 3′ primer is in M1. The sequences of clone 11, clone 3, and clone 5 are set forth in SEQ ID NO: 3, SEQ ID NO: 4 and SEQ ID NO: 5, respectively.

```
        1                                                50
clone11 CCTAC ACGTGTGTGG TGATGCACGA AACTTTACGG
 clone3 CCTAC ACGTGTGTGG TGATGCACGA GGCCCTGCAC
 clone5 CCTAC ACGTGTGTGG TGATGCACGA GGCCCTGCAC

        151                                              200
clone11 AATCACTACA AAGAGAAGTC CACCTCGAGG TCTCCGGGTA AATGAGCCTC
 clone3 AATCACTACA CGCAGAAGTC CACCTCTAAG TCTGCGGGTA AATGAGCCTC
 clone5 AATCACTACA CGCAGAAGTC CACCTCTAAG TCTGCGGGTA AATGAGCCTC

        201                                              250
clone11 GCGCCGCTGA TCTAGTGGAC GTTCCCTCAT CCACCCACCC CTCCCCCCAC
 clone3 ACGTCCCTGC ACCAGCAAGC CCTCACCCAG C......... ..CCACCCTC
 clone5 ACGTCCCTGC ACCAGCAAGC CCTCACCCAG C......... ..CCACCCTC

        251                                              300
clone11 CCCGGGCTCC AGGTCCAGCC AGGGCGCCCT AGCCCCTCCC TGTGTGCATT
 clone3 CCCGGGCTCC AAGTCCAGCC AGGACGCCCT AGCCCCTCCC TGTGTGCATT
 clone5 CCCGGGCTCC AGGTCCAGCC AGGACGCCCT AGCCCCTCCC TGTGTGCATT

        301                                              350
clone11 CCTCCTGGGC CGCCGTGAAT AAAGCACCCA GGCCGCCCTG GGACCCTGCA
 clone3 CCTCCTGGGC CGCCGTGAAT AAAGCACCCA GGCCACCCTG GGACCCTGCA
 clone5 CCTCCTGGGC CGCCGTGAAT AAAGCACCCA GGCCGCCCTG GGACCCTGCA

        351                                              400
clone11 ACGCTGTGCT GGTTCTTTCC GAGGCAGAGC CCTGGTGGCC GCCAGGCCTG
 clone3 ACGCTGTGCT GGTTCTTTCC GAGGCAGAGC CCTGGTGGCC GCCAGGCCTG
 clone5 ACGCTGTGCT GGTTCTTTCC GAGGCAGAGC CCTGGTGGCC GCCAGGCCTG

        401                                              450
clone11 CGGGGGTGGG CTGAGCCGAC TCTGGGCCAC TTTGTTCAGC ATCTGTGGGG
 clone3 CAGGGGTGGG CTGAGCCGAC TCTGGGCCAC TTTGTTCAGC ATCTGTGGGG
 clone5 CGGGGGTGGG CTGAGCCGAC TCTGGGCCAC TTTGTTCAGC ATCTGTGGGG

        451                                              500
clone11 GAGCTGACCC CACTCCGGGC CAGACACACA GTGAGTGGGT CCAGCAGGCC
 clone3 GAGCTGACCC CGCTCCGGGC CAGACACACA GTGAGTGGGT CCAGCAGGCC
 clone5 GAGCTGACCC CACTCCGGGC CAGACACACA GTGAGTGGGT CCAGCAGGCC

        501                                              550
clone11 ACCTGGGGGC TGCCCAAGGC CACAGAGGGG CTTGGCCAGA GGCACAGCTC
 clone3 ACCTGGGGGC TGCCCGAGGC CACGGAGGGG CTTGGCCAGA GGCGTACCTC
 clone5 ACCTGGGGGC TGCCCAAGGC CACAGAGGGG CTTGGCCAGA GGCACAGCTC
```

Figure 1(a)

	551				600
clone11	CACGGTCCCC	TCCAGCCACC	ACCTGCTGGG	CCGGCCTCTG	GACAGGAACC
clone3	CACGGCCCCC	TCCAGCCACC	ACCTGCTGGG	CCGGCCTCTG	GACAGGAACC
clone5	CACGGTCCCC	TCCAGCCACC	ACCTGCTGGG	CCGGCCTCTG	GACAGGAACC
	601				650
clone11	GGGGAAGCCC	CCGAGACCCT	CAGGGATTGA	GGCCCAATGC	TTCCCGCCTC
clone3	GGGGAAGCCC	CCGAGACCCT	CAGGGATTGA	GGCCCAATGC	TTCCCGCCTC
clone5	GGGGAAGCCC	CCGAGACCCT	CAGGGATTGA	GGCCCAATGC	TTCCCGCCTC
	651				700
clone11	TGCTCCAGCC	CACGCTGTGG	GGCAGGGCCA	CATCCTTGTC	CCCAGGCCCC
clone3	TGCTCCAGCC	CACGCTGTGG	GGCAGGGCCA	CATCCTTGTC	CCCAGGCCCC
clone5	TGCTCCAGCC	CACGCTGTGG	GGCAGGGCCA	CATCCTTGTC	CCCAGGCCCC
	701				750
clone11	TGTCCTTGGG	TGTCCAGAGT	CCTTGTGTCC	ACTCTGGGCC	TGCCTGGAGC
clone3	TGTCCCTGGG	TGCCCAGAGT	CCTTGTGTCC	ACTCTGGGCC	TGCCTGGAGC
clone5	TGTCCTTGGG	TGTCCAGAGT	CCTTGTGTCC	ACTCTGGGCC	TGCCTGGAGC
	751				800
clone11	CACGCATGGC	CAGGGGGTGG	CCCTGCTTCA	CCCTCAGGCT	CCCAAGGTCA
clone3	CACGCGTGGC	CGGGGGATGG	CCCTGCTCCA	CCCTCAGGCT	CCCAAGGTCA
clone5	CACGCATGGC	CAGGGGGTGG	CCCTGCTTCA	CCCTCAGGCT	CCCAAGGTCA
	801				850
clone11	GGCCTCGCCC	TCCCTCGGCC	AGGAGGCTCT	GCCCGGCTCT	CCCTGCCCAG
clone3	GGCCTCGCCC	TCCCTCAGCC	AGGAGGCTCT	GCCCGGCTCT	CCCTGCCCAG
clone5	GGCCTCGCCC	TCCCTCGGCC	AGGAGGCTCT	GCCCGGCTCT	CCCTGCCCAG
	851				900
clone11	GGCCAGGCCT	GTGCGCCCAT	GGGGAGGTCA	TCCCTGTGCC	TGAAAGGGGT
clone3	GGCCAGGCCT	GTGCGCCCAT	GGGGAGGTCA	TCCCTGTGCC	TGAAAGGGCT
clone5	GGCCAGGCCT	GTGCGCCCAT	GGGGAGGTCA	TCCCTGTGCC	TGAAAGGGGT
	901				950
clone11	CCAGGCCGAG	AGCCCTGAAT	GTCCAGGGCA	GGGACCTAGC	TGCTCCCTGT
clone3	CCAGGCCGGG	AGCCCTGAAT	GTCCAGGGCA	GGGACCTAGC	TGCTCCCTGC
clone5	CCAGGCCGAG	AGCCCTGAAT	GTCCAGGGCA	GGGACCTAGC	TGCTCCCTGT
	951				1000
clone11	GGACACGGAG	CCCAGAGCCA	CAGACAACAA	GCCCCAGCCC	CGCACGCACA
clone3	AGACACGGAG	CCCAGAGCCA	CAGACAACAA	GCCCCAGCCC	CGCACGCACA
clone5	GGACACGGAG	CCCAGAGCCA	CAGACAACAA	GCCCCAGCCC	CGCACGCACA
	1001				1050
clone11	CGAGACAGCC	CGCACCCAGC	CTCCTCCACA	CGCACTCAGG	TGTACATGCG
clone3	CAAGACAGCC	CGCACCCAGC	CTCCTCCACA	CGCACTCAGG	TGTGCATCCG
clone5	CGAGACAGCC	CACACCCCGC	CTCCTCCACA	CGCACTCAGG	TGTGCATCCG

Figure 1(b)

```
          1051                                                  1100
clone11   CACATGAGCA CACTTCACCC CGTCACACCC ACACACCTAC ACACACTCAG
 clone3   CACATGAGCA CACTTCACCC CGTCACACCC ACACGCCTAC ACACACTCAG
 clone5   CACATGAGCA CACTTCACCC CATCACACCC ACACGCCTAC ACACACTCAG

          1101                                                  1150
clone11   GTCTCGCACT CGGGGACCCA TGGGGTGACC CCACGGGCCC AGA.CCAGAG
 clone3   GTCTCGCACT CGGGGACCCA TGGGGTGACC CCACAGGCCC AGACCCAGAG
 clone5   GTCTCGCACT CGGGGACCCA TGGGGTGACC CCACAGGCCC AGACCCAGAG

          1151                                                  1200
clone11   CTGGGTCTTG TGAGCCCTCC CTGTGGACAC CAGCTGGGCC CCACCCTCCA
 clone3   CTGGGTCTTG TGAGCCCTCC CTGTGGACAC CAGCTGGTCC CCACCCTCCA
 clone5   CTGGGTCTTG TGAGCCCTCC CTGTGGACAC CAGCTGGTCC CCACCCTCCA

          1201                                                  1250
clone11   GCGCCCATGG GCTGCTCAGC GGCCCTTTCC CACACTGACC ACACTGACCA
 clone3   GCGCCCATGG GCTGCTCAGT GGCCCTTTCC CACACTGACC ACACTGACCA
 clone5   GCGCCCGTGG GCTGCTCAGC GGTCCTTTCC CACACTGACC ACACTGACCA

          1251                                                  1300
clone11   GGTCAGACAT CCGTTCCTTG CCTCCCCTGG GACACCCACG CCCCTCCCTA
 clone3   GGTCAGACAT CCGTTCCTTG CCTCCCCTGG GGCACCCACG CCCCTCCCTA
 clone5   GGTCAGACAT CCGTTCCTTG CCTCCCCTGG GGCACCCATG CCCCTCCCTA

          1301                                                  1350
clone11   GCAGGCTGAG ATCCCCCCTC AGCCCCTCGT CCTGGCAGCC TCACCCCTCG
 clone3   GCAGGCTGAG ATCCCCCCTC AGCCCCTCGT CCTGGCACCC TCACCCCTCA
 clone5   GCAGGCTGAG ATCCCCCCTC AGCCCCTCGT CCTGGCACCC TCACCCCTCA

          1351                                                  1400
clone11   GGCACAGCAC CCCTCAGGCC CGGTGCTGTC AGCCCTCCCT CCCCGGGGGC
 clone3   GGCACAGGGA CAC...AGCC CGGCGCTGTC TGCCCTCCCT CCCTGGGGGC
 clone5   GGCACAGGGA CAC...AGCC CGGTGCTGTC TGCCCTCCCT CCCTGGGGGC

          1401                                                  1450
clone11   AGGGCCCAGG AACGTGCGCT CTGCTGACCC TCCCAGCTCC AGGCCTGGCC
 clone3   AGGGCCCAGG CTCACATGCT CTGCTGACCC TCCCGGCTCC AGGCCTGGCC
 clone5   AGGGCCCAGG CTCACATGCT CTGCTGACCC TCCCAGCTCC AGGCCTGGCC

          1451                                                  1500
clone11   CCCAGGGCAG AGGAGGCCAG GAACTGAGCC TCTGTCCTGT GGGGAGGTAG
 clone3   CCCAGGGCAG AGGAGGCCAG GAACTGAGCC TCTGTCCTGG GGGGAGGTGG
 clone5   CCCAGGGCAG AGGAGGCCAG GAACTGAGCC TCTGTCCTGG GGGGAGGTGG

          1501                                                  1550
clone11   GGTCAGGGTC CCAGCTCAGG GCACAGCTCA GGATGGGAGC AGGACCCCAC
 clone3   GGTCAGGGCC CCAGCTCAGG GCACAGCTCA GGATGGGAAC AGGACACCAC
 clone5   GGTCAGGGCC CCAGCTCAGG GCACAGCTCA GGATGGGAGC AGGACACCAC
```

Figure 1(c)

```
        1551                                                        1600
clone11 AGGCCAGGCC CAGATAGCAG CCAGGGCTGG AGGGGTTGGG GCTGGGGCTG
 clone3 AGGCCAGGCC CAGACAGTGG CCAGGGCTGG AGGGGTGGGG TCTGGGGCTG
 clone5 AGGCCAGGCC CAGACAGTGG CCAGGGCTGG AGGGGTGGGG TCTGGGGCTG

        1601                                                        1650
clone11 GGCCCCAGAG ACTGACCTCA GGTGACCCCT GCCTGGCCCA TGGGGAGATC
 clone3 GGGCCCAGAG ACTGACCTCA GGTGATCCCT GCCCAGCCCA TGGGGGGATC
 clone5 GGCCCCAGAG AATGACCTCA GGTGATCCCT GCCCAGCCCA TGGGGGGATC

        1651                                                        1700
clone11 ACGCCACCTT CCCCCCACCC AGAGGGAGCC CTGCCC...T ACCCCAGTGA
 clone3 CTGCCACCTT CCCCCCACCC AGAGGGAGCC CTGCCCCGAG GCCCTGATGA
 clone5 CTGCCACCTT CCCCCCACCC AGAGGGAGCC CTGCCCCGAG GCCCTGATGA

        1701                                                        1750
clone11 CCCTGCCCAG CCCTCCGTGG GCAGACACAG CACTGACCAC CCCTCCCTGT
 clone3 TGCCACCCAG CCCCCCGTGG GCAGACACAG CACTGACCAC CCCTCCCTGT
 clone5 TGCCACCCAG CCCCCCGTGG GCAGACACAG CACTGACCAC CCCTCCCTGT

        1751                                                        1800
clone11 GCAGACTTGC TGCTGGAGGA GGAGATCTGT GCGGACGACC TGGATGGGGA
 clone3 GCAGACCTGC TGCTGGAGGA GGAGATCTGT GCGGACGCCC AGGACGGGGA
 clone5 GCAGACCTGC TGCTGGAGGA GGAGATCTGT GCGGACGCCC AGGACGGGGA

        1801                                                        1850
clone11 GCTGGACGGG CTCTGGACCA CCATCTCCAT CTT
 clone3 GCTGGACGGG CTCTGGACGA CCATCACCAT CTT
 clone5 GCTGGACGGG CTCTGGACCA CCATCACCAT CTT
```

Figure 1(d)

Figure 2(a)-(e). Novel nucleotide sequnces 3'prime of the sheep Cgamma genes. Primers are shown in shaded boxes. The 5′ primer is in CH3, and the 3′ primer is in M2. The sequences of clone 11 and clone 1 are set forth in SEQ ID NO: 8 and SEQ ID NO: 9, respectively.

```
         101                                                150
clone11  GCTACGCGTG TGTGGTGATG CACGAGGCTC TACACAACCA CTACACACAG
 clone1  GCTACGCGTG TGTGGTGATG CACGAGGCTC TGCACAACCA CTACACACAG

         151                                                200
clone11  AAGTCGATCT CTAAGCCTCC GGGTAAATGA GCCACATGCC CCCGCACCAG
 clone1  AAGTCGGTCT CTAAGCCTCC GGGTAAATGA GCCACACGCC CCCGCACCAG

         201                                                250
clone11  CAAGCCCTCA CCCAGCCCGC CCTCCCCGGG CTCCAGGTCC AGCCAGGACG
 clone1  CAAGCCCTCA CCCAGCCCGC CCTCCCCGGG CTCCAGGTCC AGCCAGGACG

         251                                                300
clone11  CCCTAGCCCC TCCCTGTGTG CATGCCTCCT GGGCCGCCAT GAATAAAGCA
 clone1  CCCTAGCCCC TCCCTGTGTG CATGCCTCCT GGGCCGCCAT GAATAAAGCA

         301                                                350
clone11  CCCAGGCCGC CCTGGGACCC TGCAACGCTG TGCTTGTTCT TTCCGAGGCA
 clone1  CCCAGGCCGC CCTGGGACCC TGCAGCGCTG TGCTGGTTCT TTCCGAGGCA

         351                                                400
clone11  GAGCCCTGGT GACCGCCAGG CCTGCGGGGG GTGGGCTGAG CCCACTCTGG
 clone1  GAGCCCTGGT GATCGCCAGG CCTGCGGGGG GCGGGCTGAG CCCACTCTGG

         401                                                450
clone11  GCCGCTTGGT TCAGCATCTG TGGGGGCGCT GACCCCTCTC CGGGCCAGAC
 clone1  GCCGCTTGGT TCAGCATCTG TGGGGGCGCT GACCCCTCTC CGGGCCAGAC

         451                                                500
clone11  ACACAGTGAG TGGGTCCGGC AGGGCACCTG GGGGCTGCCC GAGGCCTCGG
 clone1  ACACAGTGAG TGGGTCCGGC AGGGCACCTG GGGGCTGCCC GAGGCCTCGG

         501                                                550
clone11  AGGGGCTTGG CCAGAGGCGC AGCTTCACGG CCCCCTCCAG CCACCACATT
 clone1  AGGGGCTTGG CCAGAGGCGC AGCTCCACGG CCCCCTCCAG CCACCACATT

         551                                                600
clone11  CTGGGCCAGA CTCTGGGCAG GAACGGGGGA AGCCCCCGAC ACCTCAGGGA
 clone1  CTGGGCCAGA CTCTGGGCAG GAACGGGGGA AGCCCCCGAC ACCTCAGGGA

         601                                                650
clone11  TTGAGGCCCA ACGCTTCCCG CCTCTGCTCC AGCCCACGCT GAGGGGCAGG
 clone1  TTGAGGCCCA ACGCTTCCCG CCTCTGCTCC AGCCCACGCT GAGGGGCAGG
```

Figure 2(a)

```
          651                                                       700
clone11   GCCGCGGCCT TGTCCCCAGG CCCCTGTTCC TGGGTGCCCA GAGTCCGTGT
 clone1   GCCGCGGCCT TGTCCCCAGG CCCCTGTTCC TGGGTGCCCA GAGTCCGTGT

          701                                                       750
clone11   GTCCACTCTG GGCCTGCCTG GAGCCAGACT GGCCCAGGGG GAGGCCCTGC
 clone1   GTCCACTCTG GGCCTGCCTG GAGCCAGACT GGCCCAGGGG GAGGCCCTGC

          751                                                       800
clone11   TTCACCCTCA GGCTCCCGAG GTCAGGCATC ATCCTCGTCG GCCAGTAGCT
 clone1   TTCACCCTCA GGCTCCCGAG GTCAGGCATC ATCCTCGTCG GCCAGTAGCT

          801                                                       850
clone11   CTGCCTGGCT CTCTCTGCCC GGGGCCAAGC CTGTGTGCCC ATGGGGAGGT
 clone1   CTGCCTGGCT CTCTCTGCCC GGGGCCAAGC CTGTGTGCCC ATGGGGAGGT

          851                                                       900
clone11   CGTCCCTGTG CCTGAAAAGG GCCCAGGCTG GGAGCCCTGA ACGTCCAGGG
 clone1   CGTCCCTGTG CCTGAAAAGG GCCCAGGCTG GGAGCCCTGA ACGTCCAGGG

          901                                                       950
clone11   CAGGGACCTA GCTGCTCCCT GGGGACACTG AGCCCAGAGC CCCAGACACC
 clone1   CAGGGACCTA GCTGCTCCCT GGGGACACTG AGCCCAGAGC CCCAGACACC

          951                                                      1000
clone11   AAGCCCCAGC CCCGCACGCA CACGAGACAG CCCACACCCA GCGTCCTCCA
 clone1   AAGCCCCAGC CCCGCACGCA CACGAGACAG CCCACACCCA GCGTCCTCCA

         1001                                                      1050
clone11   CACGCACTCA GGCGTCCACC CGCACACAAG CATGCTTCAC CCCCGTCACA
 clone1   CACCCACTCA GGCGTCCACC CGCACACAAG CATGCTTCAC CCCCGTCACA

         1051                                                      1100
clone11   CACCCACATG CCTGCACACA CTCAGGTCTC ACGCTCCGGG ACCCATGGAG
 clone1   CACCCACATG CCTGCACACA CTCAGGTCTC ACGCTCCGGG ACCCATGGAG

         1101                                                      1150
clone11   TGATCCCACG GGCCCAGACC CAGAGCTGGG TCTCATGAGC CCTCCCTGTG
 clone1   TGATCCCACG GGCCCAGACC CAGAGCTGGG TCTCATGAGC CCTCCCTGTG

         1151                                                      1200
clone11   GACACCAGCT GGTCCCCATT CTCCAGCGCC CTTGGGCTGC TCAGTGGCCC
 clone1   GACACCAGCT GGTCCCCATC CTCCAGCGCC CTTGGGCTGC TCAGTGGCCC

         1201                                                      1250
clone11   TTTCCCACAC TGACCACACT GACCAGGTCA GACATCCTTC CTCGCCTCCC
 clone1   TTTCCCACAC TGACCACACT GACCAGGTCA GACATCCTTC CTCGCCTCCC
```

Figure 2(b)

```
         1251                                                    1300
clone11  CTGGGGCACC CACGCCCCTC CCTCGCAGGC TGAGACCCCC CCTCAGCCCC
 clone1  CTGGGGCACC CACGCCCCTC CCTTGCAGGC TGAGACCCCC CCTCAGCCCC

         1301                                                    1350
clone11  TCGTCCTGGC ACCCTCACCC CTCGGGCACA GGGACACAGC CCGGCACTGT
 clone1  TCGTCCTGGC ACCCTCACCC CTCGGGCACA GGGACACAGC CCGGCACTGT

         1351                                                    1400
clone11  CTGCCCTCCC TCTCGGGGAC AGAGCCCAGG CACGTGTGCT CTGCTGAGCC
 clone1  CTGCCCTCCC TCTCGGGGAC AGAGCCCAGG CACGTGTGCT CTGCTGAGCC

         1401                                                    1450
clone11  TCCCGGCTCC AGGCCTGGCC CCCAGGGCAG AGGAGGCCAG GAATTGAGCC
 clone1  TCCCGGCTCC AGGCCTGGCC CCCAGGGCAG AGGAGGCCAG GAATTGAGCC

         1451                                                    1500
clone11  TCTGTCCTGC GGGGAGGTGG GGTCAGGGCC CCAGCTCAGG GCACAGCTCA
 clone1  TCTGTCCTGC GGGGAGGTGG GGTCAGGGCC CCAGCTCAGG GCACAGCTCA

         1501                                                    1550
clone11  GGATGGGAGC AGGACCCCAC AGGCCAGGCC CAGACAGTGG CCAGGGCTGG
 clone1  GGATGGGAGC AGGACCCCAC AGGCCAGGCC CAGACAGTGG CCAGGGCTGG

         1551                                                    1600
clone11  GGCTGGGGCT GGGGCCCAGA GACTGACCTC AGGTGACCCC TGCCCGGCCC
 clone1  GGCTGGGGCT GGGGCCCAGA GACTGACCTC AGGTGACCCC TGCCCGGCCC

         1601                                                    1650
clone11  ATGGGGGATC ACACCGCCAT CCCCCCCGCC GCAGAGGGAG CCCTGCCCCG
 clone1  ATGGGGGATC ACACCGCCAT CCCCCCCGCC GCAGAGGGAG CCCTGCCCCG

         1651                                                    1700
clone11  AAGCCCCGAT GGCCCCGCCC AGCCCCCCGT GGGCAGACAC AGCACTGACC
 clone1  AAGCCCCGAT GGCCCCGCCC AGCCCCCCGT GGGCAGACAC AGCACTGACC

         1701                                                    1750
clone11  CCCCTCCCTG TGCAGATCTG CTGCTGGAGG AGGAGAGCTG TGCGGACGCC
 clone1  CCCCTCCCTG TGCAGATCTG CTGCTGGAGG AGGAGAGCTG TGCGGACGCC

         1751                                                    1800
clone11  CAGGACGGGG AGCTGGACGG GCTCTGGACG ACTATCTCCA TCTTCATCAC
 clone1  CAGGACGGGG AGCTGGACGG GCTCTGGACG ACTATCTCCA TCTTCATCAC

         1801                                                    1850
clone11  GCCCTTCCTG CTCAGCGTCT GCTACAGCGC CACCGTGACC CTCTTCAAGG
 clone1  GCTCTTCCTG CTCAGCGTCT GCTACAGTGC CACCGTGACC CTCTTCAAGG
```

Figure 2(c)

```
          1851                                                      1900
clone11   TGGGGGTCCA CCCTGCTGGG CCCTCGGGCC CCCTCTCTGT CCCCAGGGTC
 clone1   TGGGGGCCCA CCCTGCTGGG CCCTCGGGCC CCCTCTCTGT CCCCAGGGTC

          1901                                                      1950
clone11   CCCGCAGAGT CCCTCCCTGC CCCTCACTGT CCCTCCCTGT CCCTCTCTGT
 clone1   CCCGCAGAGT CCCTCCCTGC CCCTCACTGT CCCTCCCTGT CCCTCTCTGT

          1951                                                      2000
clone11   CCCTCTCTGT CCCTCTCTGT CCCTCTCTGT CCGTTCATTT TCCCTTCACC
 clone1   CCCTCTCTGT CCCTCTCTGT CCCTCTCTGT CCGCTCATTT TCCCTTCACC

          2001                                                      2050
clone11   GTAAGCTTGA GACAGATTGG GGTCATTTCA GAGGGCGTCT GAAGAGTCTC
 clone1   GTAAGCTTGA GACAGATTGG GGTCATTTCA GAGGGCGTCT GAAGAGTCTC

          2051                                                      2100
clone11   TGTGCCGCAC GCCTCCCTTC ATGTCAGTGG GGAGAATTCA GCAAGGGTGG
 clone1   TGTGCCGCAC GCCTCCCTTC ATGTCAGTGG GGAGAATTCA GCAAGGGTGG

          2101                                                      2150
clone11   AGTGCTGGGT GAGAAATGAG GCTTGCGGCG CTCACGAGCA GTGATGGGGC
 clone1   AGTGCTGGGT GAGAAATGAG GCTTGCGGCG CTCACGAGCA GTGATGGGGC

          2151                                                      2200
clone11   ACTGCTGCTC CCTGAGACCT GCGCGGACAC CGTTTTCCAT CGCAGGAGAA
 clone1   ACTGCTGCTC CCTGAGACCT GCGCGGACAC CGTTTTCCAT CGCAGGAGAA

          2201                                                      2250
clone11   GCGGGCAAGG GAAAACGCCC TCTTGGTCTC TCTTGAGTAA ATGTCGCGTT
 clone1   GCGGGCAAGG GAAAACGCCC TCTTGGTCTC TCTTGAGTAA ATGTCGCGTT

          2251                                                      2300
clone11   TTGGTCATCA GTCCCTCCCC CAGTGAGGCT AGAGGAGTTT ACTTCTCCCT
 clone1   TTGGTCATCA GTCCCTCCCC CAGTGAGGCT AGAGGAGTTT ACTTCTCCCT

          2301                                                      2350
clone11   CTCGATGGTC AGGTCAGGAC TGTCATAGAC TCCGGATCAC CTTCCTGTAA
 clone1   CTCGATGGTC AGGTCAGGAC TGTCATAGAC TCCGGATCAC CTTCCTGTAA

          2351                                                      2400
clone11   ATGCTTGCTT TTTGTGTGCA GAGAGCCTGT TTTAGCTCGG GGGTCCTCAG
 clone1   ATGCTTGCTT TTTGTGTGC. .AGAGCCTGT TTTAGCTCGG GGGTCCTCAG

          2401                                                      2450
clone11   CTCACTGAGC TCGCGGGGCA GGGGTGGGCT CGGGCTGGCG CCGCCTGTTC
 clone1   CTCACTGAGC TCGCGGGGCA GGGGTGGGCT CGGGCTGGCG CCGCCTGTTC
```

Figure 2(d)

```
          2451                                                 2500
clone11   GGGAGCGCAT CTCCAGCATG CTGTCGCACA GCTTCGTTGC TAACAAGACC
 clone1   GGGAGCGGCA TCTCCAGCTG CTGTCGCACA GCTTCGTTGC TAACAAGACC

          2501                                                 2550
clone11   GCTTAGTCTC GTGGTTAGAC CAACCTGCTT TCTCGAGTAA TTGTTAATTT
 clone1   GCTTAGTCTC GTGGTTAGAC CAACCTGCTT TCTCGAGTAA TTGTTAATTT

          2551                                                 2600
clone11   ACAGGAGTTT CCTGTATTTT TCAACTTATA ATCCCCTAGT CAGATAACTC
 clone1   ACAGGAGTTT CCTGTATTTT TCAACTTATA ATCCCCTAGT CAGATAACTC

          2601                                                 2650
clone11   TTTAATCACC TATTCTGCCC CTTCATTTTC TCCCTATCGA TCTCAGCAAC
 clone1   TTTAATCACC TATTCTGCCC CTTCATTTTC TCCCTATCGA TCTCAGCAAC

          2651                                                 2700
clone11   CCATCACTGC CCTCACTGTC CTTAAACTGT CCCTTAACTG ACCAGACTGT
 clone1   CCATCACTGC CCTCACTGTC CTTAAACTGT CCCTTAACTG ACCAGACTGT

          2701                                                 2750
clone11   CCCTCAGTGT CCCCTCAGAG TCACCTCCCT ATCACCTCAC TGTCCCTCTC
 clone1   CCCTCAGTGT CCCCTCAGAG TCACCTCCCT ATCACCTCAC TGTCCCTCTC

          2751                                                 2800
clone11   TGCCCCTCTC TGCCCCTCTC TGTCCCTCCC TGCCCCTCCC CGTCCCCTCT
 clone1   TGCCCCTCTC TGCCCCTCTC TGTCCCTCTC TGTCCCTCCC CGTCCCCTCT

          2801                                                 2850
clone11   CTGTCCCTCT CTGCCCCTCA CTGCTCCTCT CTGCACCTCA CTGCTCCTCA
 clone1   CTGTCCCTCT CTGCCCCTCA CTGCTCCTCT CTGCACCTCA CTGCTCCTCA

          2851                                                 2900
clone11   CTGCCCTGGG GGAGGCCCGC ATCGAGGTGT CTCTGCTCAC CCCGTCCCCC
 clone1   CTGCCCTGGG GGAGGCCCGC ATCGAGGTGT CTCTGCTCAC CCCGTCCCCC

          2901                                                 2950
clone11   ACCCCGTACC CCCCGCCAGG TGAAGTGGAT CTTCTCCTCG GT
 clone1   ACCCCGTCCC CCCCGCCAGG TGAAGTGGAT CTTCTCCTCG GT
```

Figure 2(e)

Figure 3(a)-(b). Novel 3'prime flanking sequence (SEQ ID NO: 10) of rabbit Cgamma gene.

CTCCCCCCCACGCCGCAGC

TGTGCACCCCGCACACAAATAAAGCACCCAGCTCTGCCCTGAGAGGCTGTCCTGATTCCT
TCCAAGGCAGAGGCTTCCACTCGGGCCGGACAGGGTTGGGCGGGCGCCGTGGGCTCTGCT
GTGGCCAGCAGCCAGAACGGTCAACAGTGGGACAGGGGCAGACCCACAGCACAGGGGCCT
GCCAAGAACTGGGCTCAGCCGGAGTGCTGTGGCAGGTCCCCCCTTGCAGCTAGCACGTGT
GTGCTGGGCAGGCAGAGGCCCCCAGGGGAGGAGCACACAGCTACCACCTCTGCAAGAGCC
TGGCCTGGCGCCCAGGTCCCAGTCCACAGGGTGTGTAGTACACAGAGCCTCATCTTACCA
CAGATGTAGGGACAGACCCACCACGCCCCTGCACCCCACCCAGCCTCGCCCCTTGTGGGA
CCAGGGCTACCACTCCACTCCCCCGCCCAGAGCAGCAGAAGCAGGTGGCATCCTCAGCAG
AGGGACAGTCTCACCCCTCCACGGCACTGAGCCCTGACCCATCAAACAAGCCCCTCCTGC
TGCACAGCACCTGTGTGCACATCACACACACACACACACACACACACTGAGGCCTGACCCCA
TCAAACAAGCCCCTCCTGCTGCACAGCACCTGTGTGCACATCACACACACACACACACAC
ACACTGAGGCCTGACCCCATCCTGCCCTCCTGCTGCATGGCACCTGTGTGCACATCACAC
ACACATGCACACACACACTCACACACACTGAGCCCTGACCCCATCCTGCCCTCCTGCTGC
ATGGCACCTGTGTGCACATCACACACACACACACACACACACACACACTGAGCCCTGACC
CCATCCTGCCCTCCTGCTGCATGGCACCTGTGCACACATCACAAACACGCCTGCCTCATA
CACTGGCACTCAGAAGGGGCCCCTGTACACGCATACACATGCACACACCTTGACACATGG
GCCCCCTACACACGCATCACACACACTCATGCACACTCCTCACACATGGCCCTCCTGCAC
ATACATTGCACACACATGTGCACAGACCTCACAATGGGCCCCTGCACACACATTGTACAC
ACGCATGTGCACACACTTCACACATGGGCCCCCTGCACATGCATTGCACACACAGACACA
CACATGTGCATTCCTCACACATTGGGGCCTTGCAAGGGATGCCCTGCACACACATTGCAC
ATGCTCACATGTGCACACACCCCACACTGGAGCCTTGCATAGGGCCCCCTGTACACACAC
CATGCATACACACACACCTCACACAAGGGGCCCCCTACATACGCAAAACACACACACACA
CATGCACACACCTCATACACGGGCCCCCTACACACATCACACACACACACACACACACGT
ATGCATGCCTCACACACAGACCTTGCAAGGGGCCCCCTGCACATGCATCAAACACATATG
CACATGTTTCACACACACGGTCCCCTACACACACTGCACACGCACACATGTGTACATGCT
TCACACACTGGGGCCTTGCATGGGGTCCCCTGCATAGCATAGCACCCAGAGCCACGCCAG
GTGCCTGGGCACATGGACACTGGTGCACACACAGCACCCAAGCCCAGCTCTCCCATCCAA
GGGGCACCAGCACCCCCCACTCACGAGCACCCTGAATTCCTGCTCCCCACAAGCGAACGT
GCACCCTACCTCTCCAGACGTCCCTTTCCTGTGGCCACTCCCATAGGTATTGGCGAGACC
CTCCCTTGACCCTTGGGCCTGGTCACCCAGGGGACAGGAGAGGGCCAAGTTGGGCCACAG
TACCACTGCCCAGCAGGGGTGAGGCAAGCAGAGGGTGGGTCTGTGAGGCGTCTGGCCAGC
CGTGCTGGGGCCCAGGTGGGGAGCAGCTGGGTGGCTGAGGTGGCTTCCTTGCAGGTGGTT
GGGGGGAGCTGGCCCCACAAGTGCCACTGCCCAGCACTGTCCAGTGCTTCCCCCTGAACC
TCCCGGCCACCCATCCCCAGCTGCAGCCGCAGAGGGAGTGCCCCTCGGCCTCCTCGGCAA
GACGCACGCTGACTGCCCCTCCCCATCCAGAGCTGCAGCTGGACGAGAGCTGTGCCGAGG
CCCAGGACGGGGAGCTGGACGGGCTGTGGACCACCATCACCATCTTCATCTCCCTCTTCC
TGCTCAGCGTGTGCTACAGCGCCACAGTCACCCTCTTCAAGGTGGGTGCTGCACCCGGCA
CGGGTGGGCTGGGGGCCAGGGGCGGGGGCCGGGGGCCAGGCCCTCCTCACCCCGCGCCGC
CGCTGCTGCAGGTGAAGTGGATCTTCTCGTCCGTGGTGGAGCTGAAACACACCATCGCTC
CCGACTACAGGAACATGATCGGGCAGGGGGCCTAGGCCCTTCGTTCTCACAGCCTGCCTC
CCTGGCCAGCAGGAGCCCCCGCCTCCGCCTCGGACCCCATGGCTCTCTGCTCTGGCCGCT
CCGGACCCCTCCGCCTCGGGAGAAGCGCGCAGCTGATGCCTGCCGGCCCCTCCACGCAGC
AGTGCGGACAGCACGCATCTGTCGTCCACCCGGCAGGACCCCACCCAGGGCCAGCCCTGA
CCGCCAGCCTCCTGGACTCAGGGCTCCTCTGAGAAAAGGCCCACTTGTTGGTCCCCTCAG
CCCACACCCAGGCAGCCTCCGGTGGGTGCTTCCCTGGACCCCAGCCTGAGGCCTATGCTT
GTTCTCCTGTGGCTCTTACTCAGAGGCCCGTGCTGGACTCCCACCCACAGGGACAGTGCC

Figure 3(a)

CTGCTCCAACCCTCACTGCACTGGGGGTCATGGGGCCACCTTCTGTGCAGGGGTCCTGGC
TCCAAGGAGAACACTCGAAGGGCCTGCTTGGCCACCTGGCACCACGGGAGCCCCGCTGGG
TAGCTTGGCAGGGACCCCTGAGTAGAGGTGGGTGCACCCAGCCAGAAAGCCTGCTGGATG
GACAGGAGCCTGGCGTCCGGGCCCCAGGCAGGCAGACACGGCTTCATGGACAGGAGAGGC
CAAGGAACATCAGCAAAGAGAGACAGCTGGGCCGGGCGTTCCAGCCAGACCCATCCTGCA
GCCCAGCATCGGCCCCGTGTACTACAGCAGGGACAGCCAGT

Figure 3(b)

Figure 4. Novel nucleotide sequence (SEQ ID NO:11) 3'prime of the rabbit Ckappa 1 gene.

GCGAGACGCCTGCCAGGGCACCGCCAGTGACCCTGAG
GCCCAGCCTCGCCGCTCCCTCCCCTCAGTGGACCCATTCCCACCACAGTCCTCCAGCCCC
TCCCCTCCCGGCCCTCACCCCCTCCTTGGCTTTAACCTTGCGAATGTTGGTGAGATGGAT
GAATAAAGTGAATCTTTGCACTTGTGACTTCTCTCTGCTTCTTCATTTAATGGTTATTAC
TCATGGTTTCCCAGTTGCCCTAAAGTCACCGCCATTTCATCCTCCATCCCACCCTGCCCT
GCTGTCCTCCGGGAGACACCACTCCCTGAAACCCACAGGCCCCTGTCTTCACACCGCCGA
CCCCGACCACACGTGAGGGGCTTGCTTCGTGTCTCACTCCCCTCATCGAGCCCCAGAGTC
CTCCTTTAGTGTTCTTACAGTCACATACAGTTATACAGTTTGAGTCAATCCAACCTGCCC
TGCCAATTTCCCAAAACAAAGATTTTCAGAATAAAACAGCTATGAAGAAAGTCATTTATG
GAAGCATGATATACAACAACAAAACAATGCAAACAACCTAACTGAATAAGCAGAGGGAAA
TGTTCAGACACACTATGGGGCTTGGGCTTCATGGAGTATTACACCTTCATTACATTTTTA
AACTTGTATTAAGGAGCTCCTATATTACAAGGATTATACTAGAGCACTTTCCATGACCTA
ATTAATTCTCATTACACTGTGAGGTTAAAAGCATTAGTTAAAATATTGGGCAGGCTCCCT
ATAGCCAACAGTTGTTCATATTCCATAACCCAACCATCATTTAGGTGACTCAGGGTCCTT
GTCCACCAAGAACTTTGGCAAGAATGTTCAGAGCAACTTCCTTTATAAAAGTCAAAAATT
GGAAGTAACTCAAATGTCTACCAACAGTAGAATGGGCTGTTAATTGGCATATGTTTACAT
ATTAGAATGCTGTTTAATAAAGAGAATTAACAAACTACAACTATCCCTAATAACATAGGT
GACTCATAAACATGATGTTAAGCACAAGAACCCAAACACAAAAGACACACTGTGTATGTT
TTCATCCATAGGAAGTTCAAAACTAGTTAAAAATTGAATTAGAAATTGAGATGAAGTTTA
CTCTTGGCTGGGGGTGTGGAGTGAGGCGGTGCCTGGTGGGGGACAGAAAGTGGCTGCTGG
GGTCTTGGTGATGTTCTAGTCCTCACTGTGGTGTGTGCTACTCTGAAAATGTATTGAGTA
CACAATTAGGTTTTGTGCTTTCATTATACTCCAAAGTAAGTTCTCATAAACATTGCCTTA
CACGGGGTCTACAGATAAGAGAGACTAAGAGGAATGAGTAACAGATCAAGGCCACACAGC
TGGTAGGCATGGGCCTGGGATCAAACCCTGTCTGCCCAATTCTGCTCTCTTGAGCCCTAC
ACTATTCTTTCCAGCACTGGAATGCCATGCAGAACAGGGAGTAGGACATGCTACCTCCCT
AGGGTCTCCTCCTTTACCCACCTAACCAGGAGCACCCATACATAGAAACAGGATGGAAAA
GACCATCAGCAATGGAACAAGGGAGAGATTAACCTTGTTCAGTATTGTGATCCCATGTAG
GAAAGATTGTGGGAGGAGGGCTGCACACAGAGCACCGTCCCCCTTCTATGTGCCCACCGC
TCTGTGCCCCCTTATCTGCTCACCCGCCCAGCGTGCATTCACTCAGCACCCTTTTCGCCT
GCCCTCTGAAAGAGGTGCAGAAGTAACTAAACCAGCTTCCCTCCTTCAGTGACTTGGAAT
CCAGTTTTCCTCCTCTATTTCCCCCTCCTTTTCAGTGCAGGAGCCTGGAGAAATGTGATT
TGTGTTATTATAAATTTCCCACATCATTTTGTGTAAGGGAAAATATACTCAACAGTCATA
ACTGGTAAAACTGCTGTGAAAACTAAGAGAAGTAATTCATGCGAAGGTTGAGCACCAGCC
TTGTATATACTAAGAGATCCAGAAGTGTTAGTCACCGTTAGAAATAAGAAGGAGTAGCTC
AATTTGACTAGTTCCTGGTTCACTCCTTGAACATGTTCTTCAGTTATCATCTTTCAGTCC
CAAATGATTGAACTTGGAATTAACTCACATGGATTCTAGACCTGTGCCGAGAATGGCTGC
CACTCGTGCTCTAGAGCTCTGGGGATGAGGCTGTCCCTACTGTGGTGTGCTACAGGTCTA
ACAACACACCAGGTTTTGAAGACTTAGCACTATGAATATATATATATATTATATTCCAAT
AAATTTAACATACTTTCTACTTTCATTGCATGTTGAGATAGTAATCTACTTTGGATATAT
TTGGTTAAACCAAACTATTCTCAAGACAAATTTCATAGGTTTATGGTTTTTTTACAATTT
AATCAAAATATAAACATAGTCCAAACAATTAATCCATTTAAAGTGGAGAATGGCCCAAGT
GTTTGGGCCCCTGCTACCCATTTTTAAGACCAGATGTTGCTCTTGGCTTCTGGCTTTTGC
TTGGCTCAGCCCTGGCCATTGCAGCCATCTGAGGAGTAAACAGTGGATGGAAGACATCTC
CCCCCACCCTGCCCATAAAGCTCGGGATCC

Figure 5. Novel nucleotide sequences (SEQ ID NO:12 and SEQ ID NO: 13) 5'prime of the rabbit Cgamma gene. The sequences between SEQ ID NO: 12 and SEQ ID NO: 13 (a gap of about 1000 nt) remain to be determined.

CTTCAGCGTGAACGACGCCCTCCCGCTGAGTCTCACGCACCCCCG
GTGCAGGCAGTCCGGCCTCACCTGGAAGGTGCACTGACTGAAGACACTGCAAGGGGTGAG
AGCATTTCTCAGGAAAGAGCCCTGAGTTTAGAAGGCCAGAGAGCAGAGGGCTGAGGGCTG
CCTTGCGCTGCAACCCATGGAAACACAGGCTTAGCAGATGTTCAAGCTCCGGGAGTCCAC
ACTGGGTGAGGGCAGGCGTCCAGCCTGACATGGCCCCCACAGACTCGCCCACAGGTGACG
CCAGATGAGGACGGTCAAGGATCGGGGGATCCTACATGCCCAGGGGCACCAAGACAGCCA
GGAGAGCACCAGAGGCCACAAGAGAGGCCTGGGACAGTCTCCCTGCTGACATCCAGAGCC
CAGGCCCCACTTGGCAGAGCTGGCTGAGAACACGTCTCTGCGGTGGAAGCTGCCCCGTCC
TGGGTGTTGCTCGGCGGGCTAAGCCGACTGACGCGGGGCGGGCCAGGCCATCGGCCCCAC
GGCCTGCAGCTTCCTCCCCAGCCCAGGCCACGTGGGCTCCTGGCTGAACTGGCCGCTCGC
TGAGCTCTCACCCCCCCACCCAGCAGCAGGCCGGGCGGTGCTGCCATGAGCTCCATTCCC
ACCACACAAGCGACAGCCCGGGCAGCGCCCCAGGCCCACGGGGCGTTTGCTGTGCGGCTC
GCACTCGCTGCTCAGGGCCAGCGCAGGGTGCAGCAGGGACTCACCAACCCGCCCCGACTC
GGCTGGCACGTTTACTGGAGGCCTCTGAGCCTGACCGTGGCAGTGGGGCCCGAGCAGGCT
CCAGGCTGCCCCCTGCACCCTGGGCTTGCCGCTCCGGGACCCCTGGTGGGCACCTTCCCA
GATGTGCTCCCACCGTGCCTCCTTGGGGCTCTGGGCTCATAGCGGTCACTCTCCGCCTTC
TCTCCTCCCAGCCCTTTCCTGCCTCCCTATGGCCCCATCTAGCTCTGCCCTNTCTAGAGC
CTCTACCTGGAAGGAATCTGCTGTTGGACCAAGACACCACCCGCAGCACAGGTGGGCGCC
TTGCACTGTGCTAGGCCCTCCCCGCACAGAAAAGGGCCCTAGGCTCTGGAGGCTGCTGCT
GNCTCTGGGGCTGGCATCGGGCGCACCCTGCACCCTGCACCCTGAGGAAACTCAGGCCTG
CCCGCTCCAGGCCTGTCCCT

Gap of about 1000 nt

GAAGCTTTACTTGTTGGGGGCGG
GCAGGTCTAAGGGACCTGCCAGGTGTGGGGGCTGGGCTTGACTCAGCAGGAGCCTTCTAG
AAGGAAAGCTCTGGAGAAGGTGGGGGCAGAGGGCGGGAAAGGCCTGTGAGGAGGCGGGTG
GTGGGCAGGGCCACTGGGAAGGGAGGGCTGGGGGTGACACTCAGGTTGGCACTGGGGAGG
ACCTGAGGAGGCAGGTGCCAGGCACAGAGCTGAACCTGGGCAGGGCAGGGGCAGGTAACA
AGAAGGATTCTCCTTGGAGCCTGGTCCAGGGTGGTCCAGGGCGGTCCAGGGCCTGGGGTT
TGCAAGCTGGGCTGTGACAGGGCCTCTCTCCCCAGGGGCAAGCAGCAAAGCCTGGGCACA
GAGCCCAAAGCCCCCACACAGAGAAGCTCCCCAGGGCAGGGCCTGCAGGGCTTGGGGGAC
CTTCTTGGAGCAGGCAGAGGACAGAGGCATGAGATCAGCCTCCCAGAGGCTGGAATGATA
GGTCCAGCAGGAGGGGCCCACATGGGCTCTGGTTAGCAGGAGAAAACAGCCCCCAGGTCC
CCATGGCCACCACGCACCGACTGCTGGTGAAGCTTTGGGTGGCAGACGAGAGCCACATGG
CAGCTGCTCCTGTCACTCTCTGGGAGTGCATCGAGGGGCCTCGAC

Figure 6. Comparison of human, mouse, rabbit, sheep, cow and camel sequences for the the M1 and M2 regions 3′ of the Cgamma gene.

M1

	1				46	SEQ
camel	EPLLEEESCA	EAQSGELDGL	WTTISIFITL	FLLSVCYSAT	VTLFK.	14
human-Ig3	.ELQLEESCA	EAQDGELDGL	WTTITIFITL	FLLSVCYSAT	VTFFK.	15
human-Ig3/2	.ELQLEESCA	EAQDGELDGL	WTTITILITL	FLLSVCYSAT	VTFFK.	16
human-Ig1	.ELQLEESCA	EAQDGELDGL	WTTITIFITL	FLLSVCYSAT	VTFFK.	17
mouse-Ig1	.GLQLDETCA	EAQDGELDGL	WTTITIFISL	FLLSVCYSAA	VTLFK.	18
mouse-Ig2a	.GLDLDDVCA	EAQDGELDGL	WTTITIFISL	FLLSVCYSAS	VTLFK.	19
mouse-mRNA	PGLQLDETCA	EAQDGELDGL	WTTITIFISL	FLLSVCYSAA	VTLFK.	20
mouse-Ig3	.ELELNETCA	EAQDGELDGL	WTTITIFISL	FLLSVCYSAS	VTLFK.	21
mouse-Ig3/2	.ELELNGTCA	EAQDGELDGL	WTTITIFISL	FLLSVCYSAS	VTLFK.	22
sheep-clone11	.LLLEEESCA	DAQDGELDGL	WTTISIFITP	FLLSVCYSAT	VTLFK.	23
sheep-clone1	.LLLEEESCA	DAQDGELDGL	WTTISIFITL	FLLSVCYSAT	VTLFK.	24
cow-clone11	.LLLEEEICA	DDLDGELDGL	....	....	......	25
cow-clone3/5	.LLLEEEICA	DAQDGELDGL	....	....	......	26
rabbit	..LQLDESCA	EAQDGELDGL	WTTITIFISL	FLLSVCYSAT	VTLFK.	27

M2

	1		27	SEQ
camel	VKWIFSSVVE	LKRTIVPDYR	NMIGQGS	28
human-Ig3	VKWIFSSVVD	LKQTIIPDYR	NMIGQGA	29
human-Ig3/2	VKWIFSSVVD	LKQTIIPDYR	NMIGQGA	30
human-Ig1	VKWIFSSVVD	LKQTIIPDYR	NMIGQGA	31
mouse-Ig1	VKWIFSSVVE	LKQTLVPEYK	NMIGQAP	32
mouse-Ig2a	VKWIFSSVVE	LKQTISPDYR	NMIGQGA	33
mouse-mRNA	VKWIFSSVVE	LKQTLVPEYK	NMIGQAP	34
mouse-Ig3	VKWIFSSVVQ	VKQTAIPDYR	NMIGQGA	35
mouse-Ig3/2	VKWIFSSVVQ	VKQTAIPDYR	NMIGQGA	36
rabbit	VKWIFSSVVE	LKHTIAPDYR	NMMGQGA	37
sheep-clone1/11	VKWIFSSV..	....		38

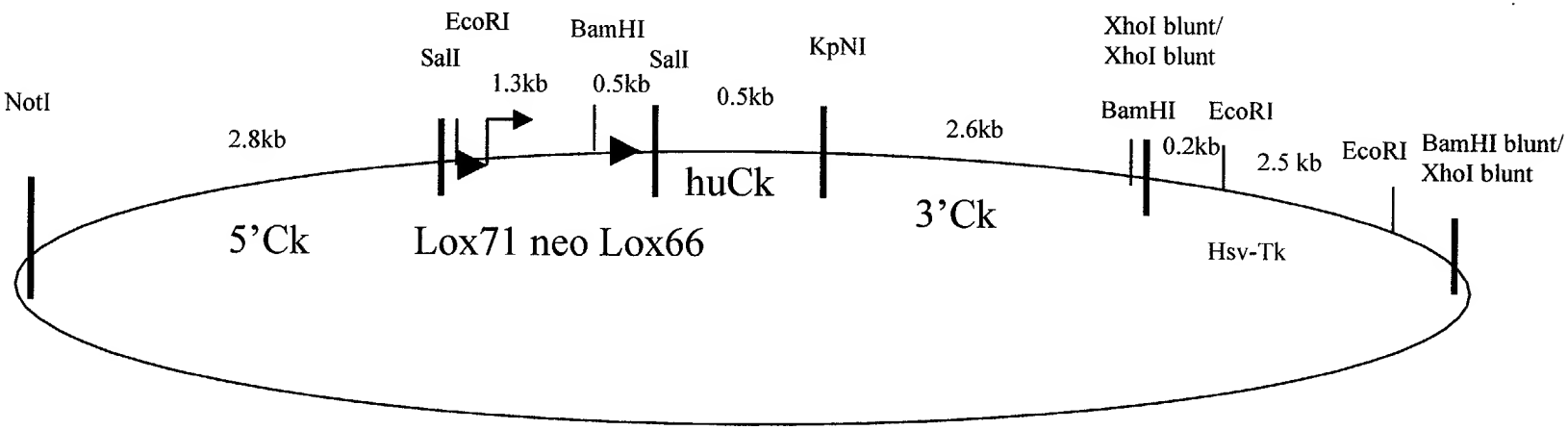

Figure 7a: DNA construct for the replacement of rabbit Cκ with human Cκ. A 0.5 kb fragment containing a DNA sequence encoding human Ck is flanked by sequences from the rabbit Cκ1 gene. The upstream sequence (5'Cκ) is 2.8 kb, the downstream sequence (3'Cκ) is 2.6 kb. The vector also contains a lox-neo cassette for positive selection and a Hsv-Tk casette for negative selection.

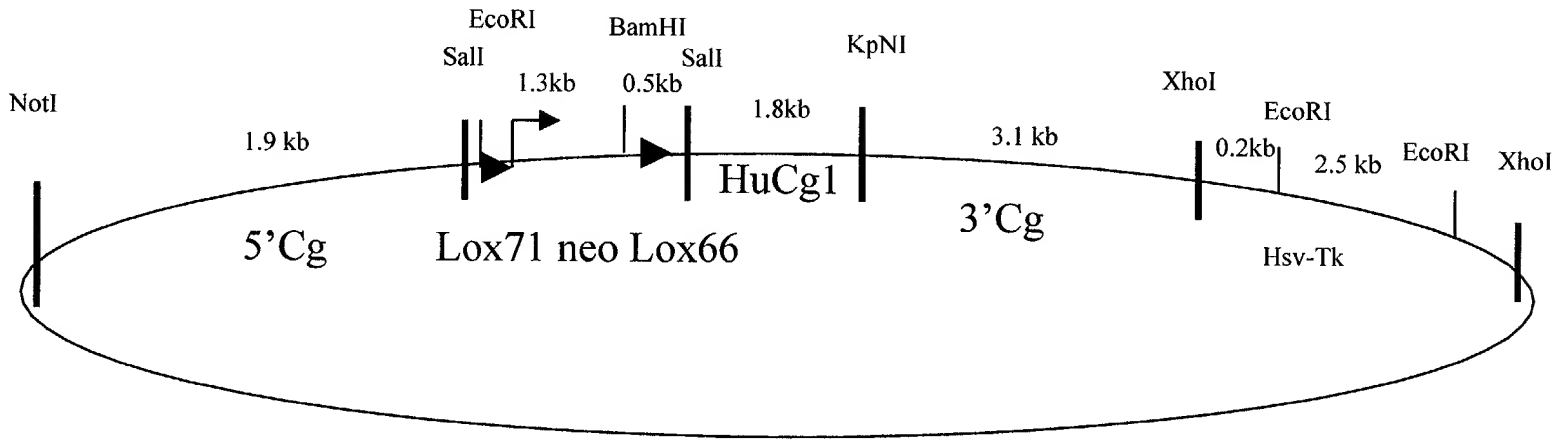

Figure 7b: DNA construct for the replacement of rabbit Cγ with human Cγ1. A 1.8 kb fragment containing a DNA sequence encoding human Cγ1 is flanked by sequences from the rabbit Cγ gene. The upstream sequence (5'Cγ) is 1.9 kb, the downstream sequence (3'Cγ) is 3.1 kb. The vector also contains a lox-neo casette for positive selection and a Hsv-Tk cassette for negative selection. The figure is not up to scale.

Figure 8. DNA fragment (SEQ ID NO: 51) containing a human immunoglobulin heavy chain Cγ1 gene segment flanked by 50 nucleotides derived from the rabbit heavy chain immunoglobulin gene. Flanking sequences derived from rabbit immunoglobulin DNA sequences are underlined.

```
                      tgacctacct accctgccaa ggtcaggggt cctccaaggc
aagggatcac atggcaccac ctctcttgca gcctccacca agggcccatc ggtcttcccc
ctggcaccct cctccaagag cacctctggg ggcacagcgg ccctgggctg cctggtcaag
gactacttcc ccgaaccggt gacggtgtcg tggaactcag gcgccctgac cagcggcgtg
cacaccttcc cggctgtcct acagtcctca ggactctact ccctcagcag cgtggtgacc
gtgccctcca gcagcttggg cacccagacc tacatctgca acgtgaatca caagcccagc
aacaccaagg tggacaagaa agttggtgag aggccagcac agggagggag ggtgtctgct
ggaagccagg ctcagcgctc ctgcctggac gcatcccggc tatgcagccc cagtccaggg
cagcaaggca ggccccgtct gcctcttcac ccggaggcct ctgcccgccc cactcatgct
cagggagagg gtcttctggc tttttcccca ggctctgggc aggcacaggc taggtgcccc
taacccaggc cctgcacaca aaggggcagg tgctgggctc agacctgcca agagccatat
ccgggaggac cctgcccctg acctaagccc accccaaagg ccaaactctc cactccctca
gctcggacac cttctctcct cccagattcc agtaactccc aatcttctct ctgcagagcc
caaatcttgt gacaaaactc acacatgccc accgtgccca ggtaagccag cccaggcctc
gccctccagc tcaaggcggg acaggtgccc tagagtagcc tgcatccagg gacaggcccc
agccgggtgc tgacacgtcc acctccatct cttcctcagc acctgaactc ctggggggac
cgtcagtctt cctcttcccc ccaaaaccca aggacaccct catgatctcc cggacccctg
aggtcacatg cgtggtggtg gacgtgagcc acgaagaccc tgaggtcaag ttcaactggt
acgtggacgg cgtggaggtg cataatgcca agacaaagcc gcgggaggag cagtacaaca
gcacgtaccg tgtggtcagc gtcctcaccg tcctgcacca ggactggctg aatggcaagg
agtacaagtg caaggtctcc aacaaagccc tcccagcccc catcgagaaa accatctcca
aagccaaagg tgggacccgt ggggtgcgag ggccacatgg acagaggccg gctcggccca
ccctctgccc tgagagtgac cgctgtacca acctctgtcc ctacagggca gccccgagaa
ccacaggtgt acaccctgcc cccatcccgg gatgagctga ccaagaacca ggtcagcctg
acctgcctgg tcaaaggctt ctatcccagc gacatcgccg tggagtggga gagcaatggg
cagccggaga acaactacaa gaccacgcct cccgtgctgg actccgacgg ctccttcttc
ctctacagca agctcaccgt ggacaagagc aggtggcagc aggggaacgt cttctcatgc
tccgtgatgc atgaggctct gcacaaccac tacacgcaga agagcctctc cctgtctccg
ggtaaatgag cgctgtgccg gcgagctgcc cctctccctc ccccccacgc cgcagctgt.
```

Figure 9. The DNA fragment (SEQ ID NO: 52) containing a VH gene segment with more than 80% sequence identity with rabbit VH elements and encoding a human VH element polypeptide sequence. Flanking sequences derived from rabbit immunoglobulin DNA sequences are underlined.

tgagtgacag tgtcctgacc atgtcgtctg tgtttgcagg tgtccagtgt
gaggtgcagc tgttggagtc cgggggaggt ctcgtccagc caggggggac cctgagactc
acctgcgcag tctctggatt caccttcagt agctatgcaa tgagctgggt ccgccaggct
ccagggaagg ggctggaatg ggtcggagcc attagtggta gtggtagcac atactacgcg
gacagcgtga aaggccgatt caccatctcc agagacaact ccaagaacac gctgtatctg
caaatgaaca gtctgagagc cgaggacacg gccgcctatt actgtgcgaa agacacagtg
aggggccctc aggctgagcc cagacacaaa cctccctgca

Figure 10. DNA fragment (SEQ ID NO: 53) containing a human immunoglobulin light chain Cκ gene segment flanked by 50 nucleotides derived from the rabbit light chain immunoglobulin Kappa1 gene. Flanking sequences derived from rabbit immunoglobulin DNA sequences are underlined.

.catccacat ggcacccagg
ggagatgtcc actggtacct aagcctcgcc atcctgtttg cttctttcct caggaactgt
ggctgcacca tctgtcttca tcttcccgcc atctgatgag cagttgaaat ctggaactgc
ctctgttgtg tgcctgctga ataacttcta tcccagagag gccaaagtac agtggaaggt
ggataacgcc ctccaatcgg gtaactccca ggagagtgtc acagagcagg acagcaagga
cagcacctac agcctcagca gcaccctgac gctgagcaaa gcagactacg agaaacacaa
agtctacgcc tgcgaagtca cccatcaggg cctgagctcg cccgtcacaa agagcttcaa
caggggagag tgttagagcg agacgcctgc cagggcaccg ccagcgaccc tgaggcccag
cctcgc.

Figure 11. DNA fragment (SEQ ID NO: 54) containing a Vκ gene segment with more than 80% sequence identity with rabbit Vκ elements and encoding a human Vκ element polypeptide sequence. Flanking sequences derived from rabbit immunoglobulin DNA sequences are underlined.

..ggcaggct gctcccaccc
catgcaggag gcagtaccag gcaggaccca gcatggacat gagggtccct gctcagctcc
tgggactcct gctgctctgg ctcccaggta aggagggaaa caacaaaaat tttattcagc
cagtgtagcc actaatgcct ggcacttcag gaaattcttc ttagaacatt actaatcatg
tggatatgtg tttttatgtt cctaatatca gataccagat gttacatcca gatgacccag
tctccatcct ctctgtctgc atctgtggga gacagagtca ccatcacttg ccgagccagt
cagggcatta gcaattactt agcctggtat cagcagaaac cagggaaggt tcccaagctc
ctgatttatg ctgcatccac tttgcaatct ggggtcccat cgcggttcag tggcagtgga
tctgggacag atttcactct taccatcagc agcctgcagc ctgaagatgt tgccacctat
tactgtcaaa agtacaacag tgcccctcca cttttcggcg gagggaccaa ggtggagatc
aaacgtaagt gcactttcct aatgttcctc accgtttctg cctgatttgt ttgctttttc
catttttttcgctat..

Figure 12. DNA fragment (SEQ ID NO: 57) containing a gene encoding human immunoglobulin light chain constant region Clambda2 flanked by 50 nucleotides derived from the chicken light chain gene. The DNA sequence of chicken origin is underlined.

catacacag ccatacatac gcgtgtggcc gctctgcctc tctcttgcag gtcagcccaa
ggctgccccc tccgtcactc tgttcccgcc ctcctctgag gagcttcaag ccaacaaggc
cacactggtg tgtctcataa gtgacttcta cccgggagcc gtgacagtgg cttggaaagc
agatagcagc cccgtcaagg cgggagtgga gaccaccaca ccctccaaac aaagcaacaa
caagtacgcg gccagcagct atctgagcct gacgcctgag cagtggaagt cccacagaag
ctacagctgc caggtcacgc atgaagggag caccgtggag aagacagtgg cccctacaga
atgttcatag tagtcccact ggggatgcaa tgtgaggaca gtggttcctc accctccctg

Figure 13. Modification of the chicken light chain locus using the ET system.
A chicken genomic BAC clone with the full length light chain locus was modified by homologous recombination. In a first step Cλ was deleted by insertion of a selection cassette which was in a second homologous recombination step exchanged against the human Cλ gene. The homology stretch was 50bp.

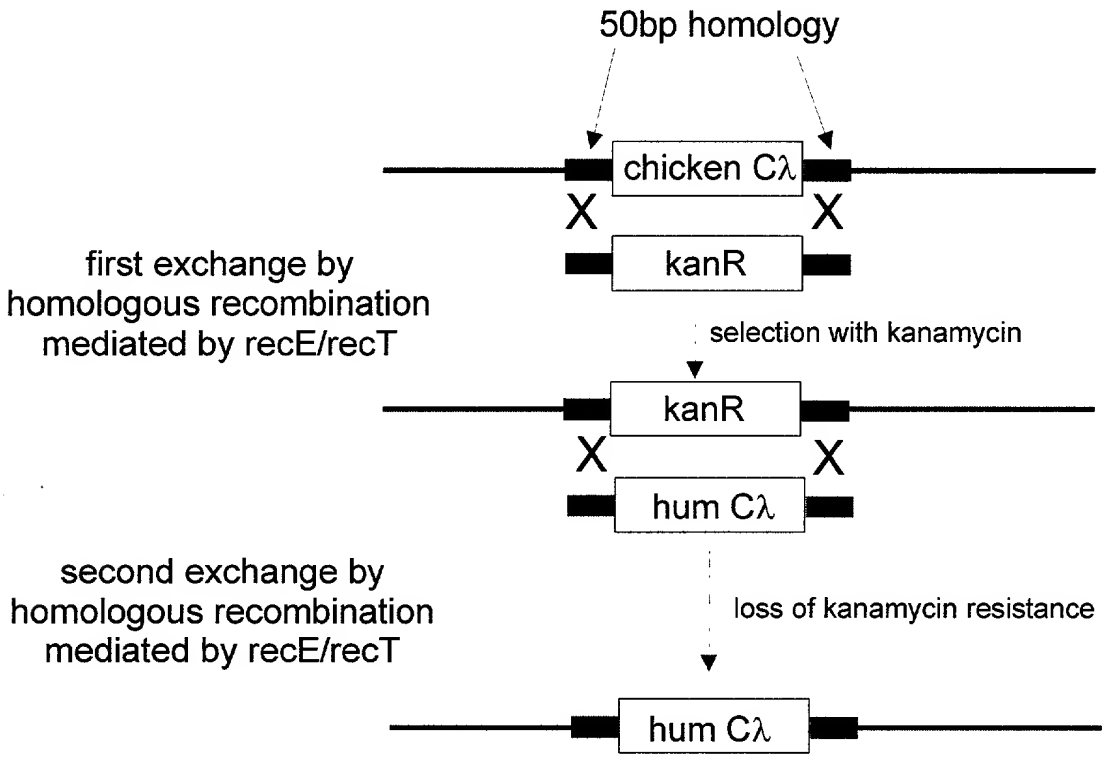

Figure 14. DNA fragment (SEQ ID NO: 58) containing a VJ gene segment with 80% sequence identity with chicken V gene segments and encoding a human VJ immunoglobulin polypeptide. Flanking sequences derived form chicken immunolgobulin DNA sequences are underlined.

.ttgccgttt tctcccctct ctcctctccc tctccaggtt ccctggtgca gtcagtgctg actcagccgc
cctcggtgtc agcagccccg ggacaagaag tcacgatctc ctgctccggg tctagtagca acattggcga
taatttcgtc tcttggtacC agcagctgcc tggcactgcc cctaagcttc tgatctatga taacaacAag
agaccctcgg gcatccctga ccgattctcc ggttccaaat ccggcacctc agccacatta ggcatcactg
ggctccaaac cggcgacgag gctgactatt actgtgggac ttgggacagc agcctttctg ttggtatgtt
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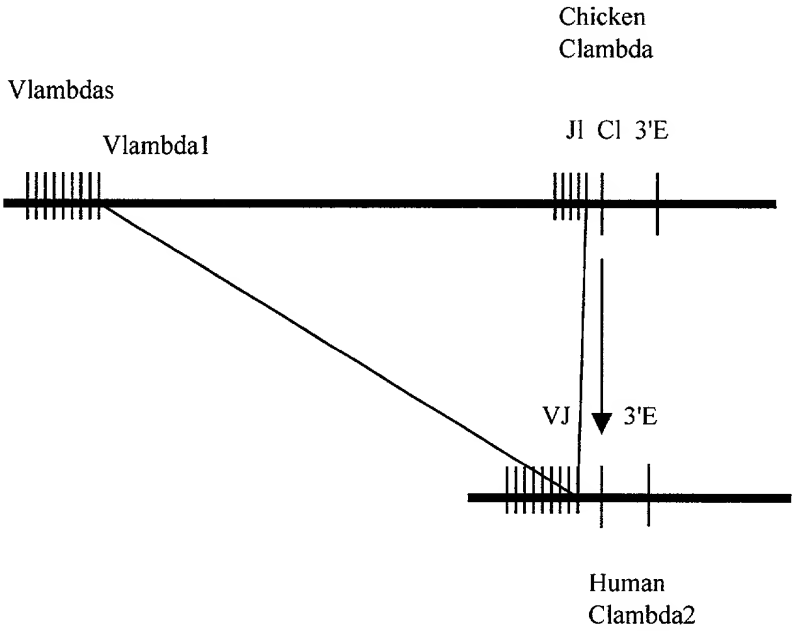

Figure 15. Humanized chicken light chain locus.